

CLAIMS

What is claimed is:

- 1 1. A method for establishing a structure of a data item within a computer system, where
2 said data item is a first instance of a class, the method comprising the steps of:
3 creating a category object that is an instance of a category class, wherein said
4 category class has one or more attributes; and
5 associating said data item with said category object without associating said category
6 object with all other instances of said class thereby causing said data item to
7 be associated with a structure that includes storage for values for said one or
8 more attributes.
- 1 2. The method for Claim 1 further comprising the computer-implemented steps of:
2 receiving data that is designated for a particular attribute of said one or more
3 attributes;
4 determining whether said data conforms to rules associated with said particular
5 attribute; and
6 if said data conforms to said rules
7 storing said data as a value into said particular attribute.
- 1 3. The method for Claim 2 wherein the step of receiving, determining, and storing are
2 performed by a method in said category class.

- 1 4. The method for Claim 2 wherein said rules are data type rules associated with a data
2 type of said particular attribute.
- 1 5. The method for Claim 2 wherein said rules are software rules.
- 1 6. The method for Claim 1 further comprising the step of:
2 storing within a database, objects that define said data item and said category object.
- 1 7. The method for Claim 1 further comprising the computer-implemented
2 step of:
3 maintaining an object relational mapping system that indicates a correlation between
4 said data item and data stored in a relational database.
- 1 8. The method for Claim 1 wherein said category class is a user defined subclass of a
2 parent category class.
- 1 9. The method for Claim 1 for the step of associating said data item with said category
2 object further includes the computer-implemented step of:
3 establishing a pointer from said category object to said data item.
- 1 10. The method for Claim 1 for the step of associating said data item with said category
2 object further includes the computer-implemented step of:
3 maintaining a table that includes an entry that indicates that said data item is
4 associated with said category.

1 11. The method for Claim 10 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said entry to include a key that identifies said category object and a
4 pointer to said category object.

1 12. The method of Claim 10 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said table externally to said data item.

1 13. The method of Claim 10 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said table internally to said data item.

1 14. The method for Claim 1 for the step of associating said data item with said category
2 object further includes the computer-implemented step of:
3 storing into said data item a hash table;
4 locating an entry in said hash table for said category object based on data associated
5 with said category object;
6 locating a pointer to said category object in said entry; and
7 following said pointer to locate said category object.

1 15. The method for Claim 14 further comprising the computer-implemented steps of:
2 receiving data that is designated as a key for locating said entry in said hash table;
3 determining whether said data conforms to rules associated with said key; and

4 if said data conforms to said rules

5 using said data as said key to locate said entry.

1 16. The method for Claim 1 for the step of creating a category object further includes the
2 computer-implemented step of:
3 maintaining a table that includes an entry that contains a particular attribute of said
4 one or more attributes.

1 17. The method for Claim 16 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said entry to include a key that identifies said particular attribute.

1 18. The method of Claim 16 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said table externally to said category object.

1 19. The method of Claim 16 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said table internally to said category object.

1 20. The method for Claim 1 for the step of creating a category object further includes the
2 computer-implemented steps of:
3 storing into said category object a hash table; and
4 locating an entry in said hash table for a particular attribute of said one or more
5 attributes.

21. The method for Claim 20 further comprising the computer-implemented steps of:
 receiving data that is designated as a key for locating said entry in said hash table;
 determining whether said data conforms to rules associated with said key; and
 if said data conforms to said rules
 using said data as said key to locate said entry.

22. The method for Claim 1 further comprising the computer-implemented step of:
 associating said category object with a second data item that is an instance of
 a second class, without associating said category object with all other
 instances of said second class wherein said first class is a different
 class from said second class.

23. The method for Claim 1 wherein said category class is a first file type and said
 category object is a first file of said first file type in a file system;
 wherein said class is a second file type and said data item is a second file of said
 second file type in a file system; and
 wherein the step of associating includes associating said second file with said first file
 without associating said first file with all other instances of said second file
 type thereby causing said second file to be associated with said structure in
 said file system.

24. A method for establishing a structure of a data item within a computer system, where
 the data item is an instance of a class, the method comprising the steps of:

creating a first category object that is an instance of a first category class, wherein
 said first category class has one or more attributes;
 creating a second category object that is an instance of a second category class,
 wherein said second category class also has one or more attributes; and
 associating said data item with said first category object and with said second
 category object thereby causing said data item to be associated with a
 structure that includes storage for values for said one or more attributes of said
 first category class and for said one or more attributes of said second category
 class.

25. The method for Claim 24 further comprising the computer-implemented steps of:
 receiving data that is designated for a particular attribute of said one or more
 attributes of said first category class;
 determining whether said data conforms to rules associated with said particular
 attribute; and
 if said data conforms to said rules
 storing said data as a value into said particular attribute.

26. The method for Claim 25 wherein the step of receiving, determining, and storing are
 performed by a method in said category class.

27. The method for Claim 25 wherein said rules are data type rules associated with a data
 type of said particular attribute.

28. The method for Claim 25 wherein said rules are software rules.

1 29. The method for Claim 24 further comprising the step of:
2 storing within a database, objects that define said data item and said first category
3 object.

1 30. The method for Claim 24 further comprising the computer-implemented
2 step of:
3 maintaining an object relational mapping system that indicates a correlation between
4 said data item and data stored in a relational database.

1 31. The method for Claim 24 wherein said first category class is a user defined subclass
2 of a parent category class.

1 32. The method for Claim 24 for the step of associating said data item with said first
2 category object further includes the computer-implemented step of:
3 establishing a pointer from said first category object to said data item.

1 33. The method for Claim 24 for the step of associating said data item with said first
2 category object further includes the computer-implemented step of:
3 maintaining a table that includes an entry that indicates that said data item is
4 associated with said first category.

1 34. The method for Claim 33 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said entry to include a key that identifies said first category object and a
4 pointer to said first category object.

1 35. The method of Claim 33 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said table externally to said data item.

1 36. The method of Claim 33 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said table internally to said data item.

1 37. The method for Claim 24 for the step of associating said data item with said first
2 category object further includes the computer-implemented step of:
3 storing into said data item a hash table;
4 locating an entry in said hash table for said first category object based on data
5 associated with said first category object;
6 locating a pointer to said first category object in said entry; and
7 following said pointer to locate said first category object.

1 38. The method for Claim 37 further comprising the computer-implemented steps of:
2 receiving data that is designated as a key for locating said entry in said hash table;
3 determining whether said data conforms to rules associated with said key; and
4 if said data conforms to said rules
5 using said data as said key to locate said entry.

1 39. The method for Claim 24 for the step of creating a first category object further
2 includes the computer-implemented step of:

3 maintaining a table that includes an entry that contains a particular attribute of said
4 one or more attributes of said first category class.

1 40. The method for Claim 39 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said entry to include a key that identifies said particular attribute.

1 41. The method of Claim 39 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said table externally to said category object.

1 42. The method of Claim 39 for the step of maintaining a table further includes the
2 computer-implemented step of:
3 maintaining said table internally to said category object.

1 43. The method for Claim 24 for the step of creating a first category object further
2 includes the computer-implemented steps of:
3 storing into said first category object a hash table; and
4 locating an entry in said hash table for a particular attribute of said one or more
5 attributes of said first category class.

1 44. The method for Claim 43 further comprising the computer-implemented steps of:
2 receiving data that is designated as a key for locating said entry in said hash table;
3 determining whether said data conforms to rules associated with said key; and

4 if said data conforms to said rules
5 using said data as said key to locate said entry.

1 45. The method for Claim 24 wherein said first category class is a first file type and said
2 first category object is a first file of said first file type in a file system;
3 wherein said second category class is a second file type and said second category
4 object is a second file of said second file type in said file system;
5 wherein said class is a third file type and said data item is a third file of said third file
6 type in said file system; and
7 wherein the step of associating includes associating said third file with said first file
8 and said second file thereby causing said third file to be associated with said
9 structure in said file system that includes storage for values for said one or
10 more attributes of said first file type and for said one or more attributes of
11 said second file type.